DOCUMENT RESUME

ED 390 827 SP 036 390

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TITLE Improvement in Teaching Skills: Perspectives from National Board for Professional Teaching Standards Field Test Network Candidates.
PUB DATE Apr 95
NOTE 27p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA April 18-22, 1995).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Early Adolescents; Elementary Education; English Instruction; Faculty Development; Higher Education; Instructional Improvement; Language Arts; Learning Strategies; *Portfolio Assessment; Portfolios (Background Materials); *Reflective Teaching; *Self Evaluation (Individuals); Standards; *Teacher Certification; *Teacher Evaluation; *Teacher Improvement; Teaching Skills
IDENTIFIERS *National Board For Professional Teaching Standards

ABSTRACT

This study addressed changes in teachers' perceptions of their teaching skills after completing the portfolio requirements in the first field test for the National Board for Professional Teaching Standards Certification and their reactions to the certification requirements. Background information on the National Board, descriptions of the portfolio requirements in the areas of Early Adolescence/Generalist and Early Adolescence/English Language Arts, and results of quantitative and qualitative data are presented. Forty-eight teachers from seven field test sites participated in the study. The results of both the quantitative and qualitative data indicated that teachers perceived portfolio assessment as improving their teaching. They further described portfolios to be challenging, time consuming, and supportive of reflective processes. (Contains 17 references.) (Author/ND)

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ED 390 827

IMPROVEMENT IN TEACHING SKILLS: PERSPECTIVES FROM NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS FIELD TEST NETWORK CANDIDATES

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This paper was presented at the annual meeting of the American Educational Research Association in San Francisco, CA, April 18-22, 1995.

This research has been supported by resources provided by grants from the DeWitt Wallace Foundation, the Pew Charitable Trust, the Knight Foundation, and the U. S. Department of Education.

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Abstract

This study addresses changes in teachers' perceptions of their teaching skills after completing the portfolio requirements in the first field test for the National Board for Professional Teaching Standards Certification and their reactions to the certification requirements. Background information on the National Board, descriptions of the portfolio requirements in the areas of Early Adolescence/Generalist and Early Adolescence/English Language Arts, and results of quantitative and qualitative data are presented. Teachers from seven field test sites participated in the study. The results of both the quantitative and qualitative data indicate that teachers perceive portfolio assessment to improve their teaching. They further describe portfolios to be challenging, time consuming, and supportive of reflective processes.

This study addresses the changes in teachers' perceptions of their teaching skills after completing the portfolio requirements for national certification and their reactions to the certification requirements. Background information on the National Board for Professional Teaching Standards, descriptions of the portfolio requirements in the areas of Early Adolescence/Generalist and Early Adolescence/English Language Arts, and results of quantitative and qualitative data are presented.

Background Information on the National Board for Professional Teaching Standards

In 1986, in response to the critique of American education presented in A Nation at Risk, the Carnegie Task Force on Teaching as a Profession issued a pivotal report entitled A Nation Prepared: Teachers for the 21st Century. The foremost recommendation of this group was that a national teacher certification program be established. The following year the National Board for Professional Teaching Standards was incorporated as a nonprofit organization funded by the federal government and the private sector (National Board for Professional Teaching Standards [NBPTS], 1991, n.d.).

The mission of the National Board for Professional Teaching Standards is to establish high and rigorous standards for what accomplished teachers should know and be able to do, to develop and operate a national, voluntary system to assess and certify teachers who meet these standards, and to advance related education reforms for the purpose of improving student learning in American schools. The National Board consists of a 63 member board of directors, more than half of whom are classroom teachers. Elected officials, business leaders, school district administrators, and university faculty are also represented on the board of directors. The work of the National Board is progressing in three phases.

In Phase 1, the philosophical groundwork was laid, and after much consultation and deliberation, the following five propositions on what teachers should know and be able to do

were written:

1) Teachers are committed to students and their learning.
2) Teachers know the subjects they teach and how to teach those subjects to students.
3) Teachers are responsible for managing and monitoring student learning.
4) Teachers think systematically about their practice and learn from experience.
5) Teachers are members of learning communities.

In addition, an organizational structure of approximately 30 certification areas was devised, and the process of developing standards for each of the certificate areas was begun. Each certificate identifies a specific student development level and subject specialties. The intent is to certify that a teacher meets high standards for teaching a specific subject at a particular student level.

In Phase 2, the National Board contracted with a Technical Analysis Group [TAG] to oversee the assessment development, research, and dissemination of information; with several Assessment Development Laboratories [ADLs] to develop assessment packages in specific areas; and with the Field Test Network [FTN] to field test various assessment packages. The Field Test Network includes 27 sites in 19 states representing 119 school districts. The FTN activities include communicating to teachers about NBPTS and National Board certification, reviewing and critiquing draft standards documents, creating a pool of teacher candidates for the field test and for field trials of assessment packages, and supporting teachers who are candidates during field testing of the assessment packages. During the 1992-93 academic year the Field Test Network began assisting in the administration of the Early Adolescence/Generalist and the Early Adolescence/English Language Arts assessment packages.

During Phase 3, the system of national certification will become operational, and work on the agenda for reform will begin. The field test of the first two certificates was completed in March 1994, and each following year will see additional certificates brought on-line, until the full slate of certificates is available in the near future.

Descriptions of Portfolios

Early Adolescence/Generalist Certificate

The portfolio for the Early Adolescence/Generalist certificate consists of three exercises, Professional Development and Service, Teaching and Learning, and Analyzing Your Lesson, that are carried out at the school site. The result of the portfolio development is a summary of the teacher's service, knowledge of teaching, success with students, and reflections of practice.

Professional Development and Service. Teachers prepare a summary of their teaching career, describe an area of professional development that has had a significant impact on practice, and describe a selected area of service that has contributed to the profession. Artifacts that document the impact of these experiences on teaching are also submitted, along with letters of support from colleagues.

Teaching and Learning. The teacher develops a narrative describing the work of one class during a three week period of instruction which draws on and integrates content from

multiple disciplines. The narrative is supported by several videotape vignettes of teaching and learning activities, each a maximum of 15 minutes in length, and selected samples of three students' work.

Analyzing Your Lesson. Teachers submit an unedited 30-40 minute videotape from among those created in the period of instruction featured in the Teaching and Learning exercise. The tape is viewed and discussed at the Assessment Center site.

Early Adolescence/English Language Arts Certificate

The portfolio for the Early Adolescence/English Language Arts certificate consists of four exercises, Professional Background Information, Student Learning, Post-Reading Interpretive Discussion, and Planning and Teaching, that are carried out at the school site. The exercises are designed to help the teacher organize and present aspects of teaching that are normally done. The result of the portfolio development is a summary of the teacher's service, knowledge and skills in guiding students through a piece of literature, success in teaching students how to write, and evidence of cultural awareness.

Professional Background Information. The teacher submits documentation that describes the level of participation in the communities outside of the classroom. Emphasis is on both professional and partnership collaborations, and how these impact students' learning.

Student Learning. The teacher prepares documentation that demonstrates effective techniques for teaching students writing skills. Artifacts of three students' writing progress, commentary about how and what the student is learning, and reflective thought on how instruction has influenced student learning is submitted.

Post-Reading Interpretive Discussion. The teacher, after leading students in a discussion of a piece of literature, submits a written commentary analyzing the post-reading interpretive discussion. A 15-20 minute video of the discussion illustrates the analysis.

Planning and Teaching. The teacher documents three weeks of instruction which incorporate a coherent approach to instruction, an integrated English language arts curriculum, and cultural awareness. A 30-40 minute videotape documents teacher and student interactions.

Portfolios and the Practice of Teaching

It is generally agreed that "if America is to have world-class schools, it must have a world-class teaching force" (NBPTS, n.d., p. 1). Determination of what exactly comprises a world-class school or how the daily interactions of a world-class teacher and his/her class proceeds has been the subject of many heated debates. However, there is agreement that standards must be set (NBPTS, 1991; Shulman, 1987b; Sykes & Plastrik, 1993) and that performance-based assessments must be used (Frederiksen, 1993; Murnane, 1991; Shulman, 1987a, 1988; Wolf, 1991).

Intimately related to the necessity of having world-class teachers are questions related to the professional development of teachers across the full range of their careers. The national movement for teacher education reform has initiated changes in teacher preparation programs across the country. Professional development schools and field-based education programs are striving to make teacher preparation more authentic with rigorous courses of study which include intensive internships. The vision of the National Council for the Accreditation of Teacher Education [NCATE] is that teachers will be prepared through programs that are based on performance-oriented standards, and that these standards will be linked to licensure/certification standards at both the state and national levels (Wise, 1995). The National Board with its focus on standards and performance-based assessments is aspiring to foster the continued development of teachers in their later stages of expertise and practice. Even with all of the reforms and improvement being made in teacher preparation, induction, and practice, the report The Current Status of Teaching and Teacher Development in the United States (Darling-Hammond, 1994), still documents limitations in teacher preparation, pre-service field experiences, staff development, and untrained and uncertified teachers in America's workforce.

However, despite the progress made and the improvement still needed, teaching portfolios are becoming increasingly recognized as a useful, reform tool for teachers at all levels to better instruction, to evaluate teaching effectiveness, and to reflect on practice (Wolf, 1991; Zubizarreta, 1994). Reflective teachers think about what they are doing, what they might do or ought to do, and why. The truly reflective teacher is one who makes instructional decisions consciously and tentatively, considers a full range of pertinent contextual and pedagogical factors, actively seeks evidence about the results, and continues to modify these decisions as the situation warrants. Furthermore, the narratives used in portfolios can be powerful in increasing teachers' awareness of their own professional reasoning (Shulman, 1987b). The wisdom that guides practice gives validity to teachers' judgements drawn from their own experiences.

Work on the use of portfolios to document growth, knowledge of content, and development of reflective abilities demonstrates that portfolios are both a process and a product (Cole, 1992; Cole, Messner, Swonigan, & Tillman, 1991). "It is a process that portfolios can be significant in developing reflection among teacher education students and teachers. When students and teachers make decisions about the way in which they organize portfolios, they need to reflect about their understanding of professional roles and responsibilities" (Cole, et al., 1991, p. 4). Preliminary findings from a pilot test of the National Board portfolio revealed that participants reported they were changed teachers as a result of the process of completing a portfolio. David Haynes (1995), an NBPTS certification candidate, found portfolio construction time consuming and difficult but reported that it was "the single most powerful professional development experience in my career" (p. 59). The National Board for Professional Teaching Standards also utilizes the portfolios developed by teachers as a product and a component in assessment for national certification.

Cochran-Smith and Lytle (1990), writing about teacher research, contend that "what is missing from the knowledge base of teaching . . . are the voices of the teachers themselves, the questions teachers ask, the ways teachers use writing and intentional talk in their work lives, and

the interpretive frames teachers use to understand and improve their own classroom practices" (p. 2). Therefore, in an effort to increase our knowledge about the development of teaching skills, the purpose of this study is to document changes in teachers' perceptions of their effectiveness as prompted by their reactions to their involvement in the performance-based, portfolio assessment required for national certification.

Methods

Procedures

Both quantitative and qualitative data were examined. Demographic information including age, years of service, gender, ethnicity, certificate area, state, and state licensing status was collected.

Teachers were asked to evaluate their teaching skills on a 10-point continuum on a 37-item survey. The survey organized teaching abilities into six areas including:

1) Organizing and managing the classroom and creating a positive learning environment,
2) Planning and designing instruction,
3) Delivering instruction to all students,
4) Demonstrating subject-matter knowledge,
5) Diagnosing and evaluating student learning, and
6) Participating as members of a learning community (Moir & Garmston, 1992).

Teachers were asked to rate their abilities before beginning work on their portfolios. After the portfolios were completed, the teachers were asked to give two ratings of their perceptions of their teaching abilities, the first **before** they began their portfolios and the second their **current** abilities after they completed their portfolios. Unfortunately, due to the fact that the National Board did not release the names of the field test candidates to the field test network coordinators for reasons of confidentiality and the dropout rates exceeded 75% at some sites, there were not sufficient pairs of pre- and post-portfolio survey results to report. The results of dependent t-tests for before and current perceptions collected after the portfolios were compiled are reported in this study.

The qualitative data was collected from the personal journals which teachers kept during the time while they were compiling their portfolios and from individual interviews with teachers which were taped and transcribed after the portfolios were completed.

Subjects

Quantitative and qualitative data was gathered from subjects at two sites in California, and at one site each in Kansas, New York, Michigan, Texas, and Washington state. The 48 teachers, who served as subjects for the quantitative analyses reported here, were teachers who completed the portfolio required for national certification and volunteered to participate in this study. The average age of the teachers was 43.67 with a standard deviation of 6.77. The mean years of teaching service was 16.96 with a range from 4 to 33 and a standard deviation of 6.97. Of the 48, 8 (17%) were from California, 22 (46%) from Michigan, 6 (12%) from New York, and 12 (25%) from Texas. Twenty-four (50%) were in the area of Early Adolescence/Generalist, 19

(40%) in Early Adolescence/English Language Arts, and 5 (10%) represented missing data. Seven (15%) of the teachers were male, 40 (83%) were female, and 1 (2%) did not indicate gender. The ethnicity reported by these teachers was 8 (17%) African American, 2 (4%) American Indian, 1 (2%) Asian, 3 (6%) Hispanic, 33 (69%) White, and 1 (2%) not reporting ethnicity. All (100%) of the teachers had a complete or full state license or credential.

Results

Quantitative Results

A series of 37 dependent t-tests was run for each of the ability items. These are organized according to the six conceptual areas outlined above and reported in Tables 1 through 6. These tables include means and standard deviations for before and current ratings along with the t-statistics, degrees of freedom, and exact probability values. Most of the before means are close to 7 while most of the after means are close to 9. In all cases the t-tests were significant at least at the .0004 level, and generally they were significant at the .0001 level.

An additional series of 7 dependent t-tests was run for the mean of all ability items in each of the six areas and for an overall rating which is the mean of all 37 items. The means and standard deviations for before and current ratings along with the t-tests, degrees of freedom, and exact probabilities are reported in Table 7. Again, all t-test are significant at the .0001 level.

Qualitative Results

A review of the teacher responses to the qualitative questions asked during the individual taped interviews are reported below:

1) Why did you decide to participate in the NBPTS field test? Most of the teachers said that they learned about the National Board from the NBPTS survey distributed to their school through the field test network during the previous academic year or from a presentation given at a teachers' meeting in their school. Some teachers were strongly encouraged to participate by their principal. Some had read about NBPTS in professional publications.

Most of the teachers indicated that they were the type of person who was interesting in learning, in bettering themselves professionally, and liked a challenge. Reasons teachers cited for participating were "to improve my teaching," to "help set/raise standards for our profession," to "help other teachers learn," "to stay current in my field," and "to see if the standards are attainable." Other teacher comments include:

- "I want the recognition that the certificate will bring. . .it will signify that I have completed a thoughtful process and been deemed successful."
- "Continued professional growth is vital,"
- "Demonstration that effective teaching and learning are happening in my classroom."
- "This process will help me see how I teach, correct my mistakes, and improve my teaching."
- "I want to reaffirm my strengths as an educator."
- "Self-reflection, self-analysis, self-revelation."
- "Preparing myself today for tomorrow."

- "It is beneficial to the students."

Several teachers reported that they hoped national certification would bring better pay at some time but were doing it for reasons other than money. A few said they hoped that national certification would help them if they decided to move.

2) Did your teaching change as a result of completing your portfolio? How? While a few teachers said that their teaching did not change as a result of completing the portfolio, the majority voiced a strong affirmation of the improvement in their teaching. The comment that the portfolio really made them think about or reflect on their teaching was very common. Unfortunately, many said that the demands of their schedules rarely afforded them the time to reflect on their own teaching. For example, teachers said the process "facilitated time for reflection," "the process forced me to think about my teaching and articulate my practice," "I saw teaching as a three phase approach, thinking, teaching, analyzing," "I realized that every decision a teacher makes 'counts'," and "I was able to look at strengths/weaknesses (got that 'high' like a first year teacher)." Other teachers saw were that their lesson plans improved, they focused more on student needs, learned more about integration of curriculum, and used more student projects.

3) How did completing the portfolio benefit you personally? What part(s) of the portfolio were most beneficial? What part(s) of the portfolio were least beneficial? When answering this question, teachers often referred back to their responses to the previous question. Most cited the improvement in their teaching as a personal benefit. Often they also discussed their increase in self-confidence. One teacher, laughingly said that teachers know that they are good teachers, but they are insecure. "That's why they always run around volunteering for things. But now I really know I'm a good teacher."

The part most often cited as most beneficial was the video taping. Previously, video taping in their classrooms was primarily of student performance. Watching themselves was scary but informative. Several teachers said that they either had never seen themselves teaching on tape or had not done so in many years. Teachers were surprised to find out how often they rubbed their noses or said OK. One teacher said she always tells her students not to say OK so much, and then was surprised to find out how much she said it. More importantly, teachers said that watching the videos taught them to focus more on the students and whether they were understanding the information than on completing the lesson before the end of the period. Several teachers commented that they now were aware that a student(s) was "falling through the cracks", although they hadn't noticed it before. One teacher said "even if I do not get national certification, what I learned from seeing my video tape made all of the hours worthwhile."

Many of the teachers said that they thought that all the exercises in the portfolio were beneficial. Some teachers said this was the most productive professional development they had experienced in a long time. The process "reinforced and renewed" their appreciation for good planning. Some said that the least beneficial exercise was the professional development part because it wasn't directly related to improving their current teaching and it amounted to

"bragging." Some teachers found the student learning exercises most beneficial because it helped them to be better graders of student writing. A few said that they didn't find the student learning exercise helpful. No one found the video taping or analyzing the lesson sections to be nonbeneficial.

4) If you could change the portfolio requirements, what suggestions would you make? Most said that they would change the deadline. Teachers began working on their portfolios in September or October, 1993, and they were due on January 14, 1994. During this timeframe, they needed to focus on a three week period of instruction. This was particularly difficult for teachers on yearround schedules who had a six week break in October and November. Teachers also would have preferred to have the deadline farther away from the winter break.

Almost all the teachers responded to this question by not addressing portfolio content per se. Many asked for things like larger packaging envelopes and clearer instructions. While some said they didn't particularly like the professional development section, they "could see why it had to be included to put the rest of it [portfolio work] in perspective for reviewers."

5) Do you think that completing your portfolio will enable you to mentor other teachers so that they can improve their teaching? Why? Most of the participating teachers have had some experience either working with pre-service student teachers or mentoring beginning teachers. Many expressed the opinion that in order to mentor teachers, one should be a good teacher first, and that this portfolio experience either demonstrated that they were good teachers or improved their good teaching even more. A teacher with many years of experience stated she was sure she would be a better mentor for another teacher because of the recent experience of being video taped and having to explain why she planned as she did. One suggested that teachers should be required to become nationally certified before becoming a mentor teacher.

6) What were the reactions of your colleagues to you and your experiences as you were completing your portfolio? In districts with wide teacher knowledge and strong district support of the national Board, participation was associated with possible salary increases and was viewed as a status activity. In districts with less NBPTS recognition, many of the teachers said that their colleagues thought that they were "crazy" for spending so much of their time on a project with such little external reward. However, the teachers themselves felt great internal reward by completing their portfolios. Teachers working on portfolios in groups found that working together was mutually beneficial and said that they would not have finished without their partner(s). Near the portfolio deadline when the FTN coordinators were able to provide teachers with substitute days or small honoraria, the teachers said that their colleagues were impressed. Although many of the teachers felt isolated in their schools, they often piqued the interest of their fellow teachers in national certification. Teachers also felt that principal support was crucial but often not forthcoming.

7) What type(s) of support would/did you find most helpful to you as you were completing your portfolio? The majority of teachers reported that personal contact from the FTN coordinator was most helpful to them. One teacher said, "When you gave me your home phone number, I knew I could get the support I needed. It made me feel much better." Although a

smaller percentage of the teachers enrolled in portfolio assessment classes at some sites, those who did said that it provided them with a forum to discuss ideas, a schedule to keep them from falling behind, and feedback for their work. Group meetings after school and on Saturday established a valuable network for a group of teachers at other sites. "It was helpful to see where others were in the process, as well as clarify directions for the exercises." Teachers at one site were provided with up to two substitute days, and as one teacher said, "I wouldn't have made it without the subs!" Teachers were provided with lists of district personnel who could help with video taping. Several used these services to help them edit their videos and found it very helpful. When one teacher lost access to a video camera, the FTN coordinator sent a graduate student and equipment to do one of the tapings. The teacher reported she would have had to quit without that support. Although many other types of support such as typing, xeroxing, etc., were offered, such support was rarely used mostly for logistic reasons. However, teachers said they greatly appreciated the offers because "it showed that what I was doing was important" and made them feel better. In summary, teachers clearly needed and wanted support while compiling their portfolios.

Some salient categories of teacher reactions including the general and varied responses to participation in the national certification process, the joys and pains of the process, and the perceptions of how compiling a portfolio affected teaching were identified from the journal entries:

Teacher reactions to their involvement in the national certification process

- "I have mixed feelings. I am relieved. I am pleased. I am satisfied. I am numb. I question if the portfolio is what it needs to be, is expected to be should be. . .However, I have no doubt about my abilities after 25 years."
- "One thing that concerns me is that while the certification process may be rigorous, those certified may not represent the highest caliber of educator. This will not be meaningful unless excellence is the only acceptable criteria."
- "I had butterflies in my stomach when I was videotaped for the first time."
- "I appreciate the time for reflection. There's almost never that time during the hectic teaching week."
- "I'm sending my video home on a rotating basis with my students. It's a good way for parents to see what's going on in the classroom when they can't visit."
- "I can honestly say I've done my best."
- "The concept of teacher as learner and teacher as part of a larger learning community is crucial."

Joys

- "This is really good. . .this is ME! This is what I have developed into over the past twenty years and I like ME!"
- "Being part of the field test network is great. . .a 'work in progress'."
- "The standards truly do reflect excellence."
- "The camaraderie this project has fostered is so special!"
- "This is one of the most grueling, yet rewarding experiences I have ever undertaken."

And pains

- "lack of support by the district, being alone in the district was inhibiting."
- "Phone call by Union president who said going through the process was too much work."
- "Quality of forethought and lack of clarity and practical application that the NBPTS materials represents."
- "Lack of explicit directions."
- "The process is insensitive to the needs of teachers, teachers have a lot to do. . ."
- "Having to work over the Christmas holiday season was painful."
- "I want to shout from the rooftops that this process is far too time consuming and cumbersome."
- "30-50 hours estimated to do this was misleading. . .more like 100!"
- "Waiting so long for the results."
- "I am still fighting the hurry up and get this done syndrome."

Perceptions of how compiling a portfolio affected their teaching and what areas were changed

- "I've learned something about myself. I believe a teacher of reading and writing must also be a reader and writer."
- "I continue to integrate reading and writing into my life as a result of this process."
- "I need to find more ways to motivate students.
- "Watching myself on video made me realize I do too much of the talking."
- "I am not entirely myself on camera. It's an uninvited intruder on the kids, too. Besides, it's not what's on camera, it's what's missing."
- "I have more small group discussions. I can monitor 4 or 5 groups and get more effective involvement than with a whole class discussion."
- "I appreciate how this process makes me think about myself and what I am doing when I teach."
- "As I watched my students on tape, I saw that work habits and study skills are lacking for many of them."
- "Much of my teaching success was not just the material learned, but the techniques that delivered the learning and the choices for which the students were accountable."
- "Documenting my work in a portfolio forces me to do my best."
- "Learning to do a portfolio helps students to prepare one."
- "Saving student work forces me to more carefully construct all lessons."
- "Journaling has been extremely valuable in terms of keeping me focused."
- "Task analysis. . .before I couldn't see what other things I should have taught first."

Discussion

In this discussion we have several considerations to examine including the sample, the design and the positive results, the difference between perceptions and actual improvements in teaching skills, the use of portfolios as a catalyst for changes in teaching, and the possible negative impacts on the self-esteem of teachers. First of all, our sample is not large, which makes generalizations only tentative. Yet these subjects are unique in that they represent seven field test network sites in six states, they participated in two different certification areas, and they

are experienced teachers evidenced by the fact that the average number of years of teaching is approximately 17. Many have been recognized by their schools, districts, and states with numerous teaching awards, and as the interviews revealed they still "love to learn." It is our considered opinion that this is a largely homogenous group of premier teachers. Granted these are self-selected subjects, who managed to find the time to complete the rigorous portfolio assessment, but the consistent and strong results from this group demands attention.

It is unfortunate that our original research design could not be implemented as conceived, but the overwhelmingly positive results of the post-portfolio data must be examined. When subjects are asked to rate their performance before and after some experience, three things are possible. Their perceptions of their performance levels can decrease, remain constant, or increase. Perceptions of decreases in ability level were virtually non-existent in this study. In cases where it remained constant, it must be remembered that these are excellent, experienced teachers who were already functioning at a high level of effectiveness when they began their portfolios. For teachers of this caliber to consistently experience improvement in all ability areas is particularly noteworthy. However, just because teachers perceive that their teaching skills improved does not necessarily mean that they have. To determine whether performance actually improved or not, performance data need to be analyzed. We hope that the performance data from the portfolio assessments can be released for study, and we are working to make this possible.

The qualitative data also supports the quantitative results. Teachers overwhelming felt positively about the portfolio process because it served as a catalyst for them to examine their teaching critically and rethink the decisions they make on a daily basis in the best interests of children. In their typically busy schedules, they rarely found the time for such self-reflection and were happy for this opportunity despite the hard work it involved. On intensive self-examination, many teachers found their educational philosophies and decisions reaffirmed. In other cases, they were stimulated to find new ideas and solutions for pressing problems. Especially important was the video-taping. For example, one teacher who was recognized as a best teacher in her state said that compiling the portfolio greatly improved her teaching and that she learned so much from her videos that she would continue to videotape herself every year. Such openness to growth was common.

Such reactions of perceived benefit generate several questions. If portfolio assessment is to be a catalyst for change, when would it be best for teachers to begin work on portfolios? One might argue that earlier is better. However, in our conversations with teachers who began portfolio work and then decided not to submit, several said that they felt their work didn't yet meet their own personal standards. One teacher said, "I'm not putting my best foot forward with this video and I did it three times, so I'm not going to submit." Since simply submitting a portfolio does not guarantee that national certification will be granted, the question arises of how will teachers prepare themselves to go through the process? One teacher who is heavily involved in teacher training for English Language Arts said that younger teachers would have an easier time compiling portfolios because universities now require pre-service teachers to do portfolios. Others said that they could not have possibly completed such a rigorous project earlier in their careers. Also what mitigating variables are related to some experienced teachers perceiving great

improvement in their teaching after completing their portfolios while others felt that their teaching skills remained constant? Many other questions could be asked, and more research needs to be undertaken.

Another area which needs to be studied is that of negative impact on the self-esteem of teachers. When they turned in their portfolios many teachers voiced the belief that participating in the portfolio development process was a positive and gratifying experience even if they did not become nationally certified, but it was also very obvious that virtually all the teachers expected to receive this certification. In fact, of the approximately 500 teachers who completed the entire assessment process, less than 100 were granted certification. It was not the purpose of this study to examine this issue, but it needs to be examined in light of teachers' views of their career development and their sense of ego strength, the support that can be provided to teachers, and district rewards and punitive actions.

In summary, both the quantitative and the qualitative results overwhelmingly demonstrate that teachers perceive portfolio assessment to improve their teaching, and these results lead to a series of questions which we hope scholarly research and effective practice can begin to answer.

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Table 1. Results for Organizing and Managing the Classroom - Creating a Positive Learning Environment Items

Item			Before	Current	t	df	p
1.	From Beginning Ability Recognizes the importance of a positive learning environment, and applies strategies that support and foster self-esteem. To Advanced Ability Promotes a positive learning environment through modeling and developing strong relationships with and among students.	M SD	8.04 1.89	9.47 .69	5.16	44	.0001
2.	From Beginning Ability Uses a structured room environment to maximize teacher control and maintains it regardless of the learning activity. May experiment with various grouping strategies. To Advanced Ability Arranges the classroom to facilitate teacher movement, proximity, and student engagement. Varies the groupings to accommodate learning activities and regroups when appropriate.	M SD	7.66 2.06	9.47 .69	5.64	45	.0001
3.	From Beginning Ability States expectations for student behavior on occasion and generally restates them in the same way in different situations. To Advanced Ability States expectations clearly and explains them in several ways. Draws upon a variety of strategies for assisting students to understand and meet expectations.	M SD	7.62 1.95	9.27 .76	5.98	46	.0001
4.	From Beginning Ability Establishes routines and procedures to accomplish regular classroom tasks and has transitions between activities. To Advanced Ability Develops a flexibility in the use of routines, procedures, and transitions that provides for efficiency and is sensitive to the needs of individuals and groups.	M SD	7.78 1.72	9.13 1.12	5.59	45	.0001
5.	From Beginning Ability Tries to handle disruptive student behavior by ignoring it or by frequently interrupting the instruction. To Advanced Ability Monitors student behavior during a lesson and responds to students to encourage positive behavior. Rarely interrupts lesson to deal with discipline.	M SD	7.02 2.33	9.04 1.12	5.90	43	.0001

Table 1. Results for Organizing and Managing the Classroom - Creating a Positive Learning Environment Items

Item			Before	Current	t	df	p
6.	From Beginning Ability Works to develop relationships with students. Uncertain of appropriate role. To Advanced Ability Demonstrates rapport, empathy, and supportiveness towards all students.	M SD	7.80 2.33	9.52 .65	5.14	45	.0001
7.	From Beginning Ability Focuses time and energy on classroom routines, procedures, and behavior management thus decreasing time on academic tasks. To Advanced Ability Uses efficient and effective classroom management and organization which maximizes the time that students are actively engaged on meaningful academic activities.	M SD	7.43 2.23	9.22 .81	4.86	44	.0001

Table 2. Results for Planning and Designing Instruction Items

Item			Before	Current	t	df	p
1.	From Beginning Ability Plans day-to-day or a few days in advance with some consideration given to previous or future instructional outcomes. To Advanced Ability Plans well in advance and uses current information about students' progress to guide planning. Planning is connected and builds upon previous learning and future outcomes.	M SD	7.68 2.08	9.38 .87	5.66	46	.0001
2.	From Beginning Ability Plans individual lessons and units with some sense of the appropriateness of content in relation to student development and exposure. To Advanced Ability Plans lessons and units that are conceptually clear, developmentally appropriate, and experientially relevant to future outcomes.	M SD	7.77 1.81	9.40 .74	6.12	46	.0001
3.	From Beginning Ability Begins to develop sensitivity to students diverse backgrounds, experiences, understandings, interests, and disposition. Incorporates their understanding in the design of the lesson. To Advanced Ability Designs instruction that consistently displays sensitivity to students' diverse background experiences, dispositions, understandings, and interests.	M SD	7.78 1.95	9.19 .97	4.96	45	.0001
4.	From Beginning Ability Follows lesson plan closely with some awareness of need to adapt to unexpected opportunities or problems. To Advanced Ability Uses the lesson plan flexibly as a guide and modifies plans during a lesson to capitalize on unexpected opportunities or problems. Draws upon a repertoire of contingency plans.	M SD	7.85 2.16	9.65 .64	5.51	46	.0001
5.	From Beginning Ability Plans activities with some awareness of the learning outcome and success indicators for each lesson. To Advanced Ability Identifies specific learning outcomes and success indicators for each lesson.	M SD	7.59 1.71	9.00 1.02	5.30	45	.0001

Table 2. Results for Planning and Designing Instruction Items							
Item			Before	Current	t	df	p
6.	From Beginning Ability Uses the textbook as the primary source for planning instruction. To Advanced Ability Draws upon and adapts extensive supporting materials and enrichment activities to enhance instructional units.	M SD	7.02 2.78	9.31 1.17	5.54	46	.0001
7.	From Beginning Ability Designs lessons using a whole group lecture format as the primary mode of instruction. Focuses learning outcomes primarily at recall and comprehension of information. To Advanced Ability Designs lessons to engage students in learning by discovery, so they can search for problems, patterns and solutions. Focuses learning outcomes on problem solving and critical thinking.	M SD	6.96 2.80	9.23 1.12	5.41	46	.0001

Table 3. Results for Delivering Instruction to All Students Items							
Item			Before	Current	t	df	p
1.	From Beginning Ability Explains instructional materials to be used and/or the steps to be carried out to complete academic tasks. To Advanced Ability Models clearly instructional materials to be used and steps to be followed. Demonstrates, models, provides for guided practice, and then checks for understanding.	M SD	8.06 2.03	9.46 .65	5.05	46	.0001
2.	From Beginning Ability Relies on a limited range of instructional activities to respond to the diversity of learning styles and needs. To Advanced Ability Selects a variety of activities and media to respond to the diversity of learning styles and needs in the class.	M SD	7.41 2.54	9.51 .83	5.52	45	.0001
3.	From Beginning Ability Introduces or reviews concepts or skills orally, using few, if any, visuals or other demonstration techniques. To Advanced Ability Introduces and reviews concepts and skills in a clear and complete manner using oral, visual, and other demonstration techniques (e.g. metaphors, explanations, illustrations, examples, models).	M SD	7.61 2.30	9.38 .85	5.40	45	.0001
4.	From Beginning Ability Employs a limited range of grouping techniques for encouraging involvement and interaction of all students. To Advanced Ability Creates structures that encourage involvement by individuals, pairs and small groups. Uses a variety of strategies for engaging students in discourse.	M SD	7.59 2.54	9.51 .59	5.22	45	.0001
5.	From Beginning Ability Presents/discusses concepts or skills with little reference to students' prior knowledge or skills. To Advanced Ability Presents/discusses skills and concepts in the context of what the students have already mastered, showing how they build on prior knowledge.	M SD	7.41 2.24	9.38 .85	6.20	45	.0001

Table 3. Results for Delivering Instruction to All Students Items							
Item			Before	Current	t	df	p
6.	From Beginning Ability Begins to develop a repertoire of instructional strategies, relying most often on the one or two strategies that are most familiar. To Advanced Ability Uses a variety of instructional strategies (e.g. direct instruction, cooperative learning, individualized instruction, inquiry) to engage students. Selects appropriate strategy to maximize the learning outcome.	M SD	7.59 2.35	9.43 .90	5.62	45	.0001
7.	From Beginning Ability Attempts to alter instruction based on cues related to student interest or success. May have difficulty interpreting success. To Advanced Ability Uses student cues to alter instruction during the lesson. Discriminates important student cues from unimportant cues.	M SD	7.41 2.36	9.32 1.07	5.51	45	.0001

Table 4. Results for Demonstrating Subject-Matter Knowledge Items

Item			Before	Current	t	df	p
1.	From Beginning Ability Acquires the subject matter knowledge and attempts to link and convey the concepts with accuracy and coherence. To Advanced Ability Understands subjects taught and shows how this knowledge is created, organized, linked to other disciplines, and applied to real-world settings.	M SD	7.93 2.29	9.47 .80	4.76	45	.0001
2.	From Beginning Ability Uses textbooks and commercially prepared worksheets as the primary source for teaching subject-matter content. To Advanced Ability Critiques and adapts content in the textbook and other resources to represent concepts and principles at various levels of complexity to match students' development.	M SD	6.80 2.88	9.40 .74	6.34	45	.0001
3.	From Beginning Ability Begins to collect resource materials in the discipline(s), but has limited criteria for evaluating their usefulness. To Advanced Ability Keeps current with the growing body of curricular materials available for his/her specific discipline(s) and constantly evaluates the usefulness of those materials and instruction to students.	M SD	7.57 2.00	9.17 .97	5.58	44	.0001
4.	From Beginning Ability Attempts to consider knowledge, skills, abilities, and interests students bring to the subject matter. To Advanced Ability Builds upon knowledge, skills, abilities, and interests students bring to the subject matter and tailors curricular materials and instruction to students.	M SD	7.63 2.29	9.23 1.07	4.77	45	.0001
5.	From Beginning Ability Anticipates that students will comprehend the subject matter and presents content in the same way to all students. To Advanced Ability Knows subject matter in such a way that enables thorough explanations. Understands and predicts possible student conceptions and misconceptions of particular topics in a subject area.	M SD	7.40 2.45	9.25 .95	5.11	46	.0001

Table 5. Results for Diagnosing and Evaluating Student Learning Items

Item			Before	Current	t	df	p
1.	From Beginning Ability Knows when the lesson is not going well but may not be able to identify the variables that are affecting the instruction. Continues with lesson as planned. To Advanced Ability Recognizes the appropriateness and consequences of teaching actions and makes in-progress changes in instruction.	M SD	7.51 2.15	9.54 .58	6.38	46	.0001
2.	From Beginning Ability Reflects on student characteristics more frequently than own instruction when evaluating outcomes of a lesson. To Advanced Ability Reflects on own teaching in terms of effects on students and sees what the teacher does as the main influence on learning rather than student characteristics (e.g., motivation, intelligence, behavior).	M SD	7.51 1.86	9.29 .82	6.62	46	.0001
3.	From Beginning Ability Targets lessons to meet the needs of the whole class and stays with the planned academic task even if it is too easy or too difficult for the students. To Advanced Ability Monitors student progress and adjusts instruction appropriately, both for individuals and for the whole class.	M SD	7.55 2.29	9.38 1.10	5.11	46	.0001
4.	From Beginning Ability Employs a few assessment strategies. Communicates with parents regarding student progress to meet school requirements. To Advanced Ability Uses a repertoire of assessment strategies to determine what students have learned. Provides constructive feedback frequently and in a variety of ways to students and parents.	M SD	7.55 2.03	9.19 .88	5.03	45	.0001

Table 6. Results for Participating as Members of a Learning Community Items

Item			Before	Current	t	df	p
1.	From Beginning Ability Works primarily in own classroom. Participates on occasion in school-wide planning or curriculum work. To Advanced Ability Participates as part of a collaborative team and contributes to the overall school effectiveness. Shares curricular and instructional ideas with the staff.	M SD	7.72 2.68	9.35 1.16	3.86	46	.0004
2.	From Beginning Ability Recognizes the value of working with the community but tends to focus on day-to-day life in the classroom. To Advanced Ability Uses knowledge of school's community as a powerful resource for delivering instruction.	M SD	7.24 2.69	8.81 1.51	3.88	45	.0003
3.	From Beginning Ability Begins to build professional relationships with other teachers in the school. May feel too vulnerable to ask for help. To Advanced Ability Establishes professional relationships with other teachers in the school. Shares ideas and looks to peers for ideas and support.	M SD	8.15 1.93	9.56 .68	4.99	46	.0001
4.	From Beginning Ability Identifies areas of need and begins to explore professional development opportunities. To Advanced Ability Sees self as a life-long learner, seeking to expand own repertoire and deepen knowledge and skill.	M SD	8.60 1.83	9.75 .53	4.36	46	.0001
5.	From Beginning Ability Relies on own judgment about individual student problems. May be uncertain about when and from whom to seek guidance. To Advanced Ability Works with other teachers, resource specialists, and community agencies for help with an individual student.	M SD	8.02 1.86	9.25 1.48	3.84	46	.0004
6.	From Beginning Ability Begins to develop effective interpersonal communication and human relations skills. To Advanced Ability Demonstrates effective interpersonal communication and human relations skills.	M SD	8.22 1.63	9.43 .77	4.98	45	.0001

Table 6. Results for Participating as Members of a Learning Community Items							
Item			Before	Current	t	df	p
7.	From Beginning Ability Interacts with parents at prescribed times(e.g. open house, report cards). Begins to experiment with other forms of contacts. To Advanced Ability Understands the impact of family culture, expectations, and environment on student learning. Uses a variety of strategies to connect with parents.	M SD	8.00 1.99	9.15 1.35	4.38	46	.0001

Table 7. Results for Sums of Items

Item			Before	Current	t	df	p
1.	Mean of 7 items on organizing and managing the classroom - creating a positive learning environment.	M SD	7.60 1.71	9.33 .64	6.07	39	.0001
2.	Mean of 7 items on planning and designing instruction.	M SD	7.52 1.74	9.30 .66	6.58	45	.0001
3.	Mean of 7 items on delivering instruction to all students.	M SD	7.58 1.99	9.43 .61	6.40	45	.0001
4.	Mean of 5 items on demonstrating subject-matter knowledge.	M SD	7.46 2.15	9.29 .73	5.81	44	.0001
5.	Mean of 4 items on diagnosing and evaluating student learning.	M SD	7.53 1.81	9.36 .70	6.39	45	.0001
6.	Mean of 7 items on participating as members of a learning community.	M SD	7.94 1.69	9.30 .77	5.08	44	.0001
7.	Mean of all 37 items.	M SD	7.59 1.77	9.34 .60	5.71	37	.0001